

# Insurers as Partners in Inclusive Green Growth

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# Inclusive Green Growth

- Durable economic growth in the developing world *requires* that environmental degradation be addressed
- This “green growth” becomes *inclusive* and socially equitable when the improved efficiencies and other benefits are distributed all across the economic spectrum
- IGG requires climate change mitigation and adaptation (“resilience” is new buzz-word)

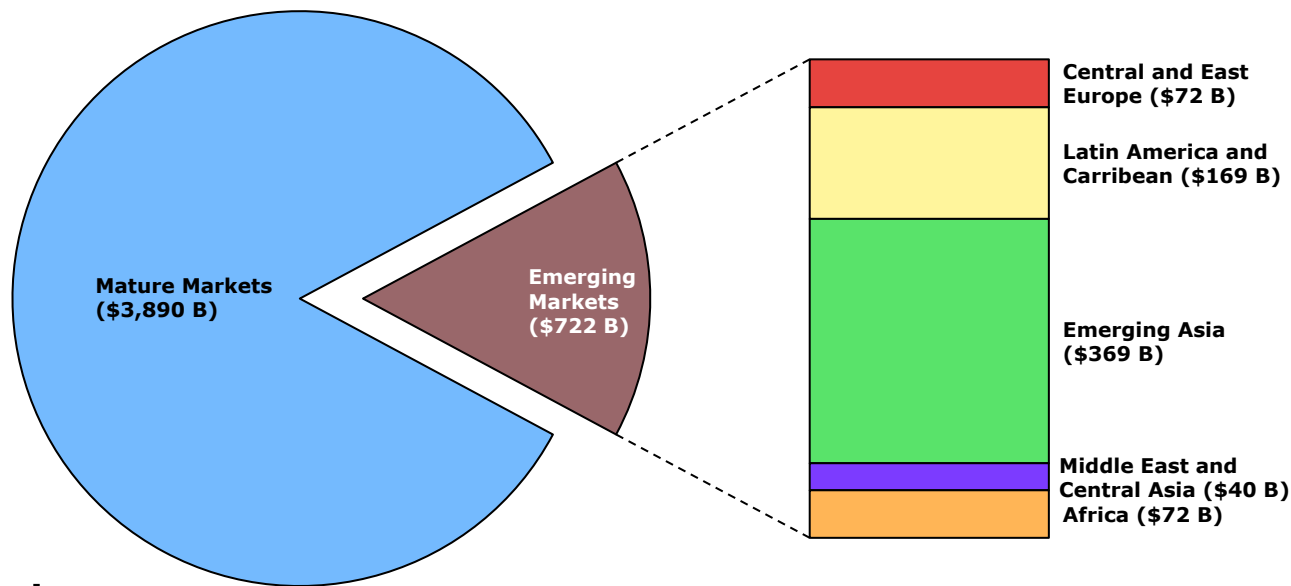
# Why involve insurance?

Insurance stimulates growth ... and IGG requires:

- ➡ risk assessment *and* management, at multiple levels, with a “systems” view - in every sector of the economy
- ➡ insurers already offer green products and services
- ➡ insurers are one of world’s largest institutional investors
- ➡ insurers are active in relevant public policy spheres
- ➡ ample precedent for public-private partnerships
- ➡ insurance of natural disasters is a significant form of (financial) adaptive capacity
- ➡ if segments of emerging markets become uninsurable, availability and affordability decline & growth becomes more difficult (and burdensome to the public sector)

# Premiums in emerging markets recently topped \$700B/y

16 Percent of \$4.6 Trillion/year Global Insurance Market is in Developing Countries and Economies in Transition: 2012

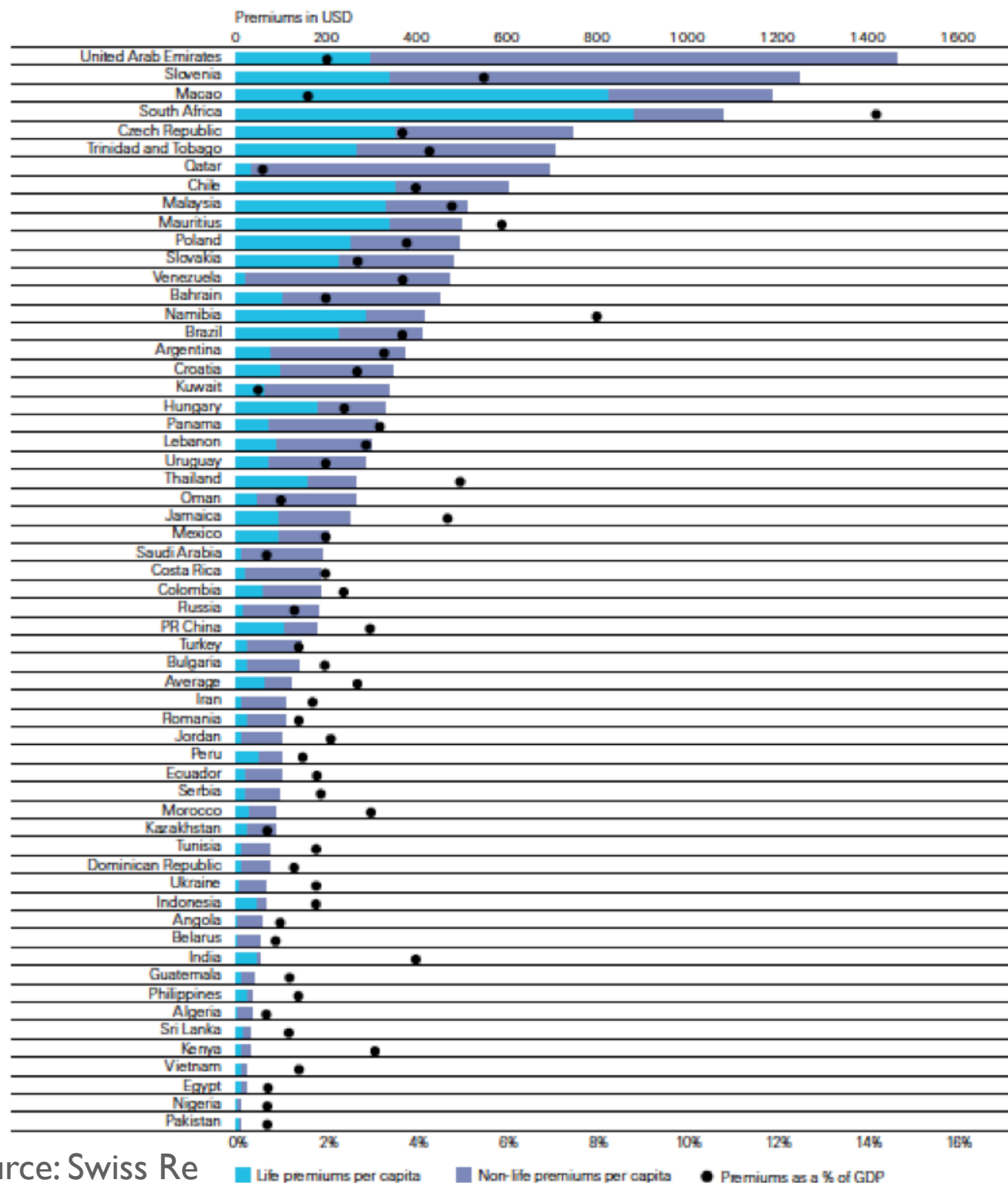


## Global Market

- ➡ \$4.6T in global premiums
- ➡ \$22 T assets invested
- ➡ 7% of global GDP
- ➡ Millions of employees

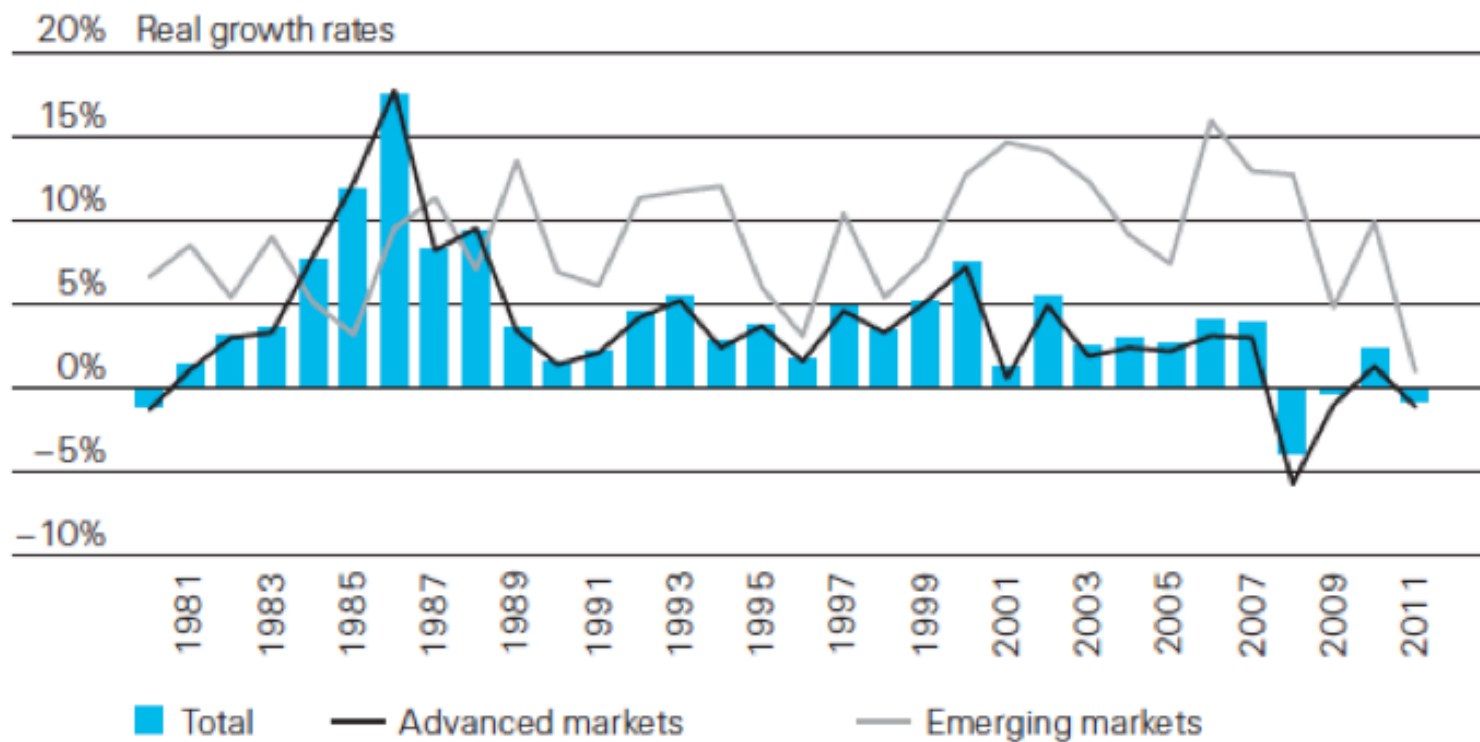
***Emerging markets  
are the future of  
insurance***

Insurance  
premiums per  
capita--and  
share of GDP--  
vary widely in  
emerging  
markets  
(2012 data)



Source: Swiss Re

# For three decades, emerging markets have exhibited consistently stronger premium growth than advanced markets

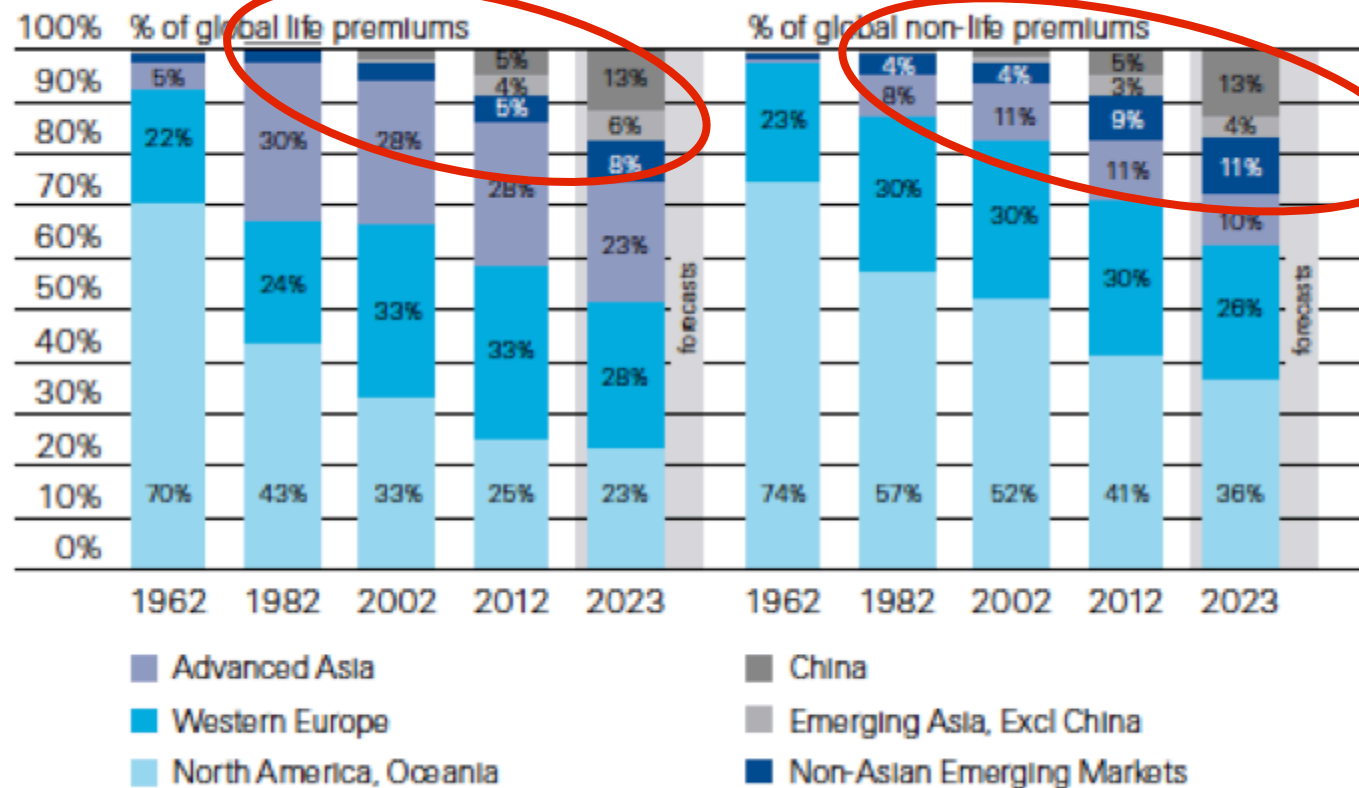


Source: Swiss Re Economic Research & Consulting

Insurance market share is growing,  
rapidly, in developing countries  
... 28% of global premiums by 2023

Life & Health

Property & Casualty



Source: Swiss Re Economic Research & Consulting

# Alternative Risk Transfer / Insurance-Linked Securities

First appeared in 1990s;  
now many variants

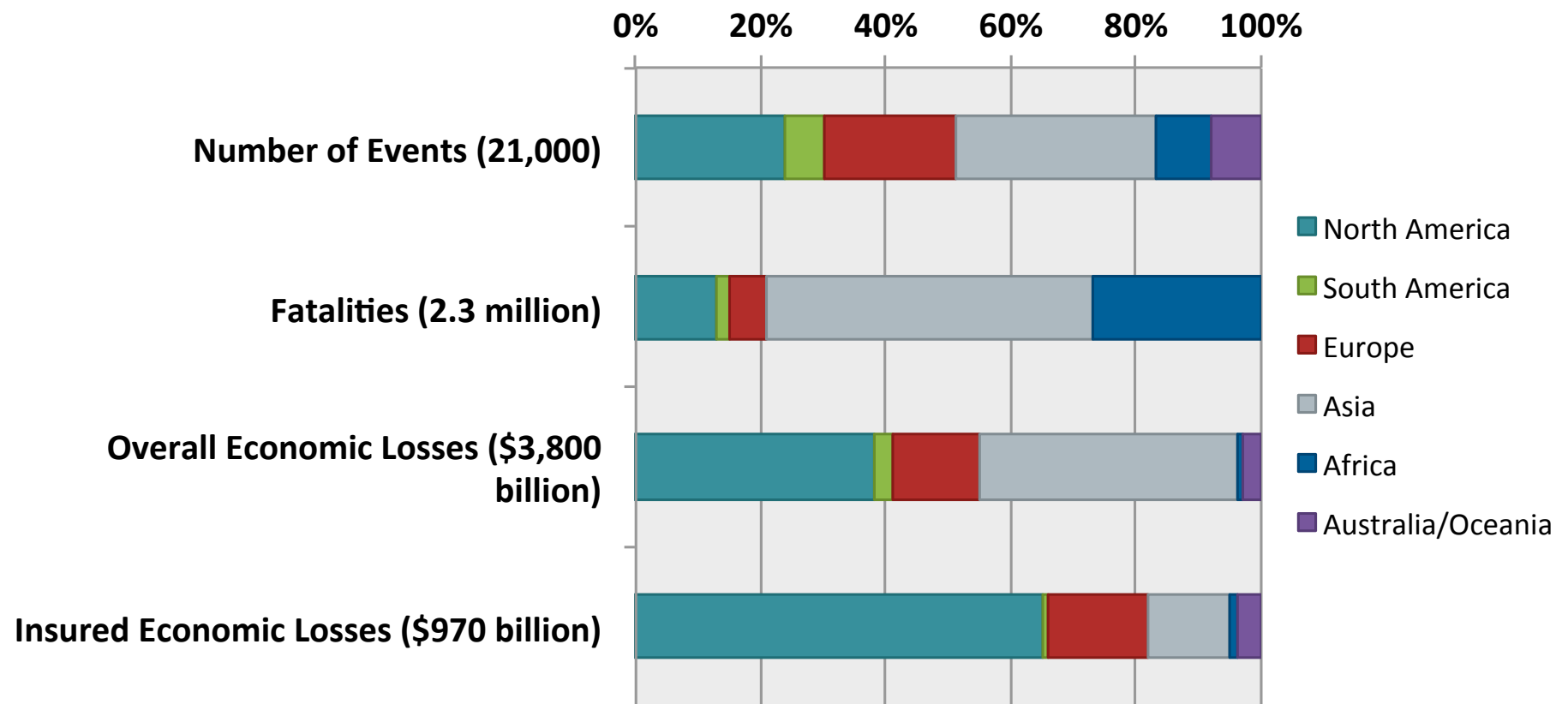
- **Captive Insurance**
- **Catastrophe Bonds**
- **Catastrophe Equity Put Options**
- **Catastrophe Options**
- **Catastrophe Risk Equity Puts**
- **Catastrophe Risk Swaps**
- **Contingent Surplus Notes**
- **Extreme Mortality Securitization**
- **Industry Loss Warranties**
- **Sidecars**
- **Value-in-Force Securitization**
- **Weather Derivatives**

A fit for IGG ?

- ➡ Still a relatively small amount of capacity (14% of reinsur.), and heavily centered on US market
- ➡ Regulatory oversight; systemic risk (correlation)
- ➡ Ability to execute “green insurance” methodologies unclear
- ➡ Inclusion of physical risk management unclear



# Insurers play a significant role in absorbing natural disaster costs: ~1/4 of global total since 1980

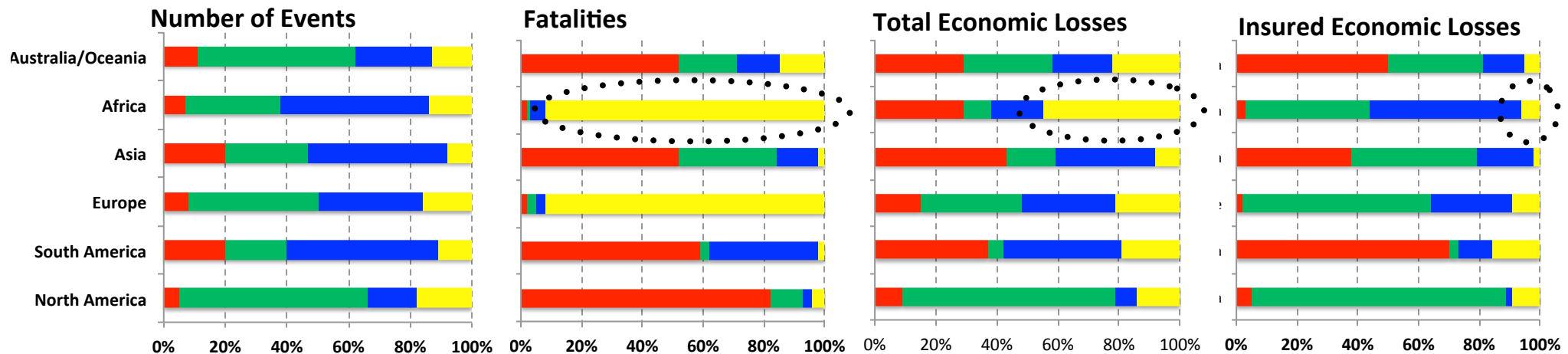


***Distributional profiles vary widely, depending on metric***

Source: Munich Re NatCAT Service

# The patterns of insured losses by region are distinctly different from broader societal metrics

- Geophysical (earthquake, tsunami, volcanic eruption)
- Meteorological/Weather
- Hydrological (flood, landslide)
- Climatological (heatwave, coldwave, wildfire, drought)



***Frequency of events growing fastest in low-income countries***

# Insurability under climate change?

Locus	Vulnerability	Must be...
Internal to insurance domain (actuarial)	risk/uncertainty	measurable
	loss occurrences	uncorrelated
	maximum losses	manageable
	average loss	moderate
	loss frequency	high
	fraud	tolerable
	adverse selection	tolerable
Market & regulatory	premium	adequate, affordable
	limits	acceptable to customers
	capacity	sufficient for extremes
Societal	public policy	consistent with insurer needs
	legal and regulatory	allows insurer adaptations

***Climate risk: insurers' "systemic risks" have come under scrutiny by financial regulators and investors***

# Not lost on insurers...

**The climate is changing**, and it is increasingly more reliable to associate certain kinds of events—such as wildfires and drought—with climate change.

*Lindene Patton*

Chief climate product officer, Zurich Financial

Statistically, it's clear something is happening. ...We have to rethink damage amounts, rethink risk management, rethink the planning and design of buildings. **The assumptions we have made based on the past are no longer valid**. We have to plan for a much different future ...

*Rod Taylor*

Managing director, Aon's Environmental Services group

Given all the attention around climate change, clients, naturally, are asking us when it's going to happen.... Given the loss experiences of the last two to three years, our answer is: **'It's starting to happen now.'**

*Cliff Warman*

Head, Marsh's Environmental practice in Europe  
The Middle East and Africa

# Not lost on insurers...

**Push politics aside.** To us it is very clear: The risk of **climate change is very real, and it has a real potential to be disruptive to our business.**

*Chris Lewis*

Senior vice president of insurance risk management, The Hartford

**We're not sticking our heads in the sand.** Clearly there is a change in temperature. **We need to mitigate and adapt.**

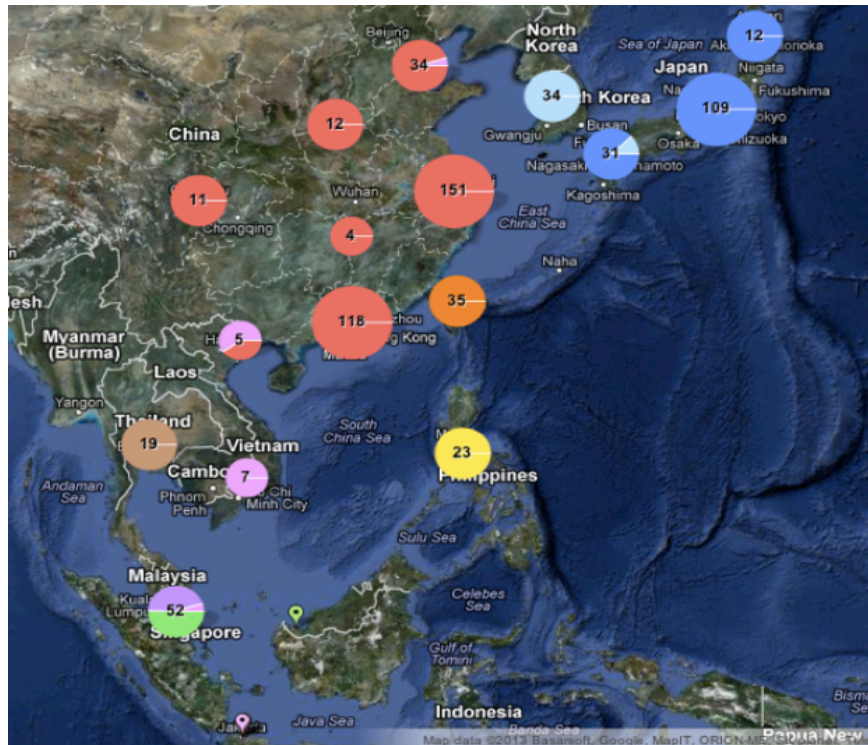
*David Zona*

Chief underwriting officer, Fireman's Fund, a unit of Allianz

Climate change is real, and **you don't risk the solvency of your company by saying, 'I don't believe it.'**

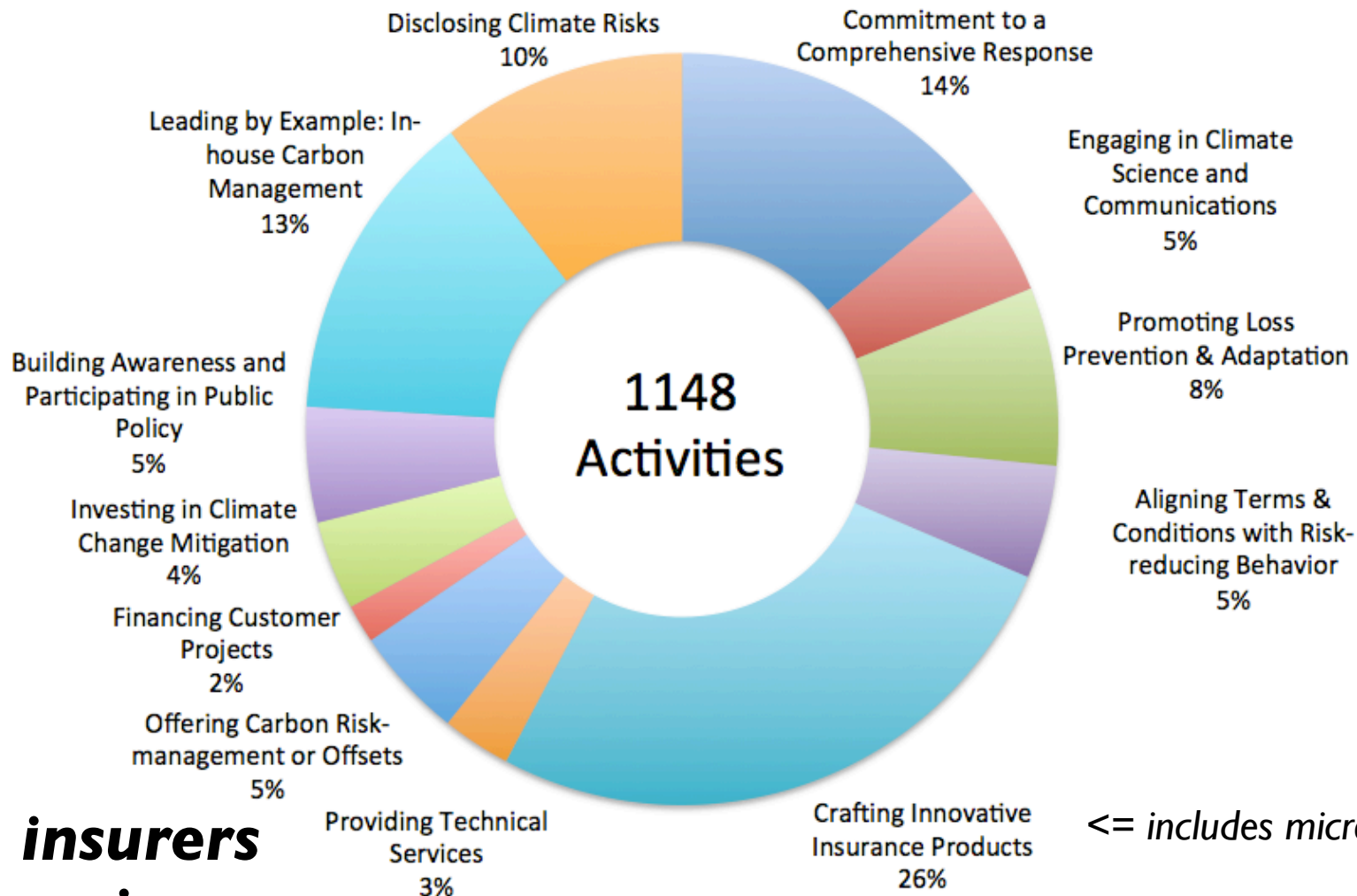
*Maurice "Hank" Greenberg*  
CEO, Starr Companies

# Climate risks extend well beyond property damage ... and are globalized



**Natural disasters are the #1 trigger for supply-chain disruptions** (59% of cases, per Allianz). **The 2011 Thai floods are a prominent example** (\$12B insured losses v \$0.37B premiums that year)

# Enormous (but ‘quiet’) innovation in “Green Insurance” (as of late 2012)



*<= includes micro-insurance*

- **378 insurers**
- **42 non-insurers**
- **51 countries**

Source: Green Insurance Data Service (E. Mills)

# Concrete examples



- > **Promoting green buildings and vehicles** – 203 examples -- Mileage-based insurance; premium credits for low-emissions vehicles ('halo effect') - E.g., Nedbank and MiWay have done so in South Africa. Other companies (e.g., HBN Assurance in Sri Lanka). Green buildings products and services; Fireman's Fund penetration 150 million square feet. Other players: ACE, Aon, Allianz, AXA, Chartis, Chubb, FM Global, The Hartford, Nationwide, Sampo Japan, The Travelers, and Zurich Financial



- > **Forestry projects** – Obtaining carbon offsets and enhanced resilience. E.g., Tokio Marine Nichido has reforested 8,200 hectares of mangroves in Fiji, India, Indonesia, Myanmar, the Philippines, Thailand and Vietnam.



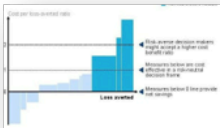
- > **Carbon markets** - 155 insurers engaged in substantive in-house energy management projects; 28 have become carbon neutral. Some projects performed directly by insurers, as done by AIG in China. Also offering services for carbon project risk, e.g., (upstream) project development advisory and (downstream) non-delivery insurance.



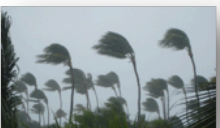
- > **Industry-driven climate change policy and corporate governance initiatives** – 129 insurers; 29 countries -- UNEP, Geneva Association, and Climatewise. Emerging market members include insurers from Brazil, China, Colombia, Nigeria, South Africa and Thailand.



- > **Climate science, including next-generation climate modeling** – Dozens of studies. E.g., analysis of outlook for torrential rainfall, wildfire, and coastal risks under climate change in collaboration with Santam (South Africa). Partners: WWF, University of Cape Town, Council for Scientific and Industrial Research (SA), UNEP-FI



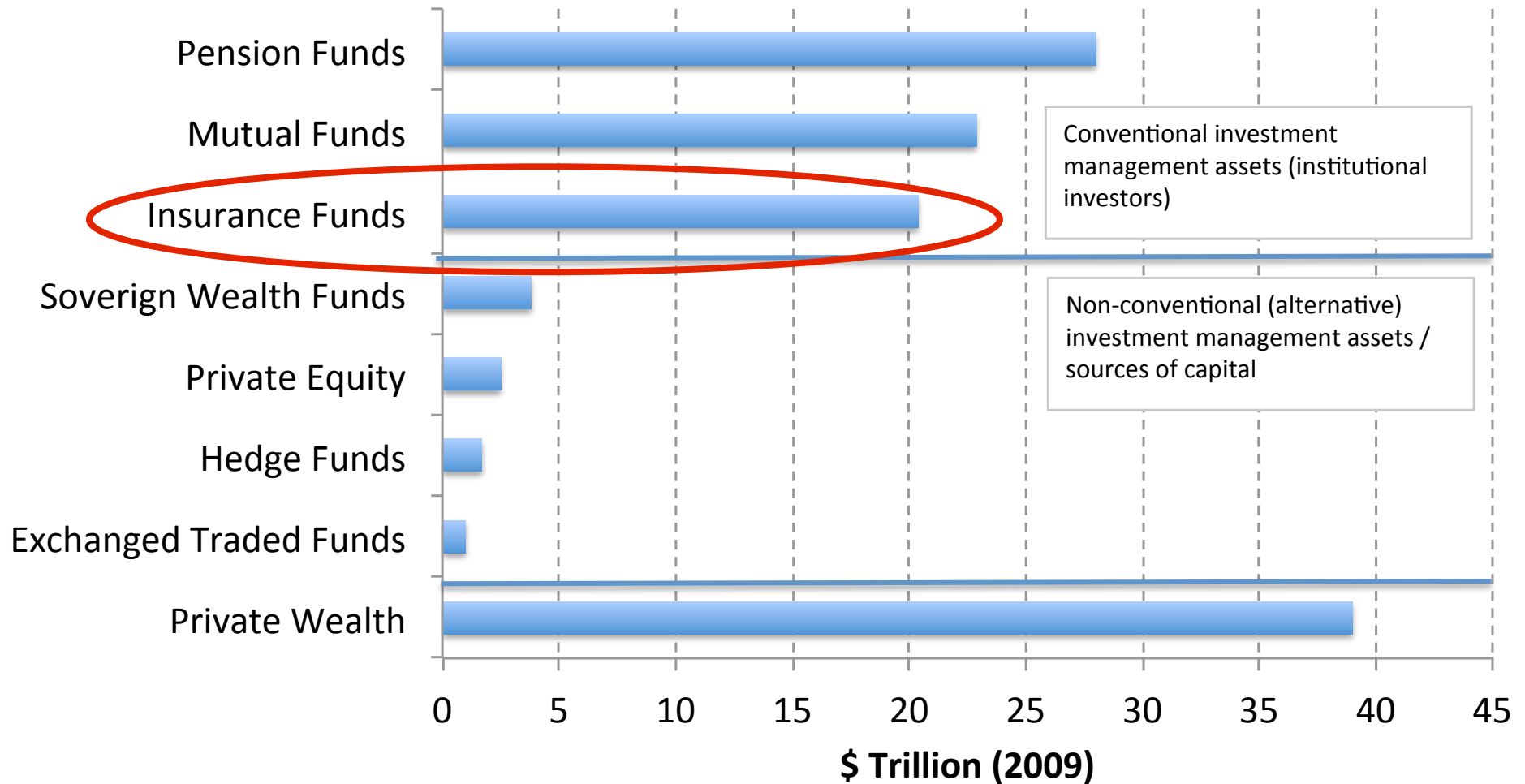
- > **Cost-benefit analysis of climate change adaptation projects** – E.g., initiative where Swiss Re, partners with McKinsey, Global Environment Facility, European Commission, the Rockefeller Foundation, Climate Works, and Standard Chartered Bank. Focus countries - India, Guyana, Tanzania, Mali, China and Samoa.



- > **Public-private partnerships to improve liquidity and access to post-event finance** – E.g., Caribbean Catastrophe Risk Insurance Facility (16 CARICOM governments). World Bank helping Island states pool insurance purchasing power + 120M donor funds for enhanced resilience. Initiative with AXA and World Food Program used drought index to trigger food relief payment to Ethiopian government.



# Insurers are major players in the investment arena

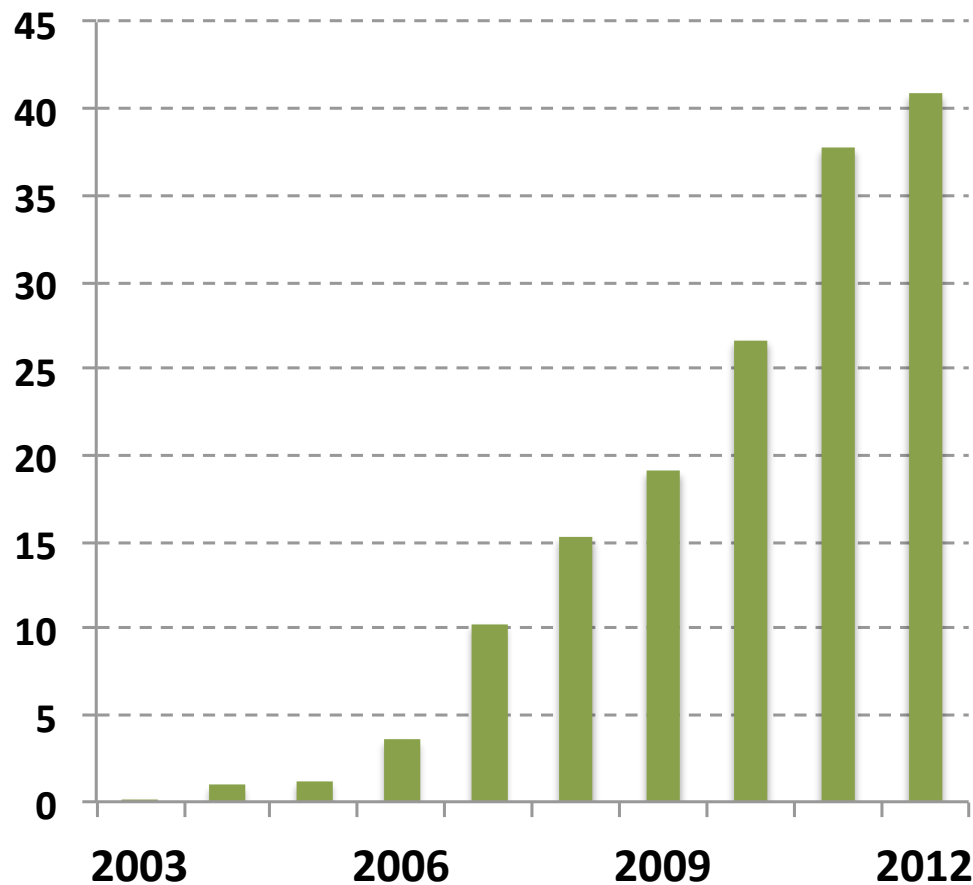


Source: Della Croce, et al., (2011)

# \$40 billion of identified insurer investment in green infrastructure

\$B (2012),  
cumulative

**Green Investments by Insurers**



Of which:

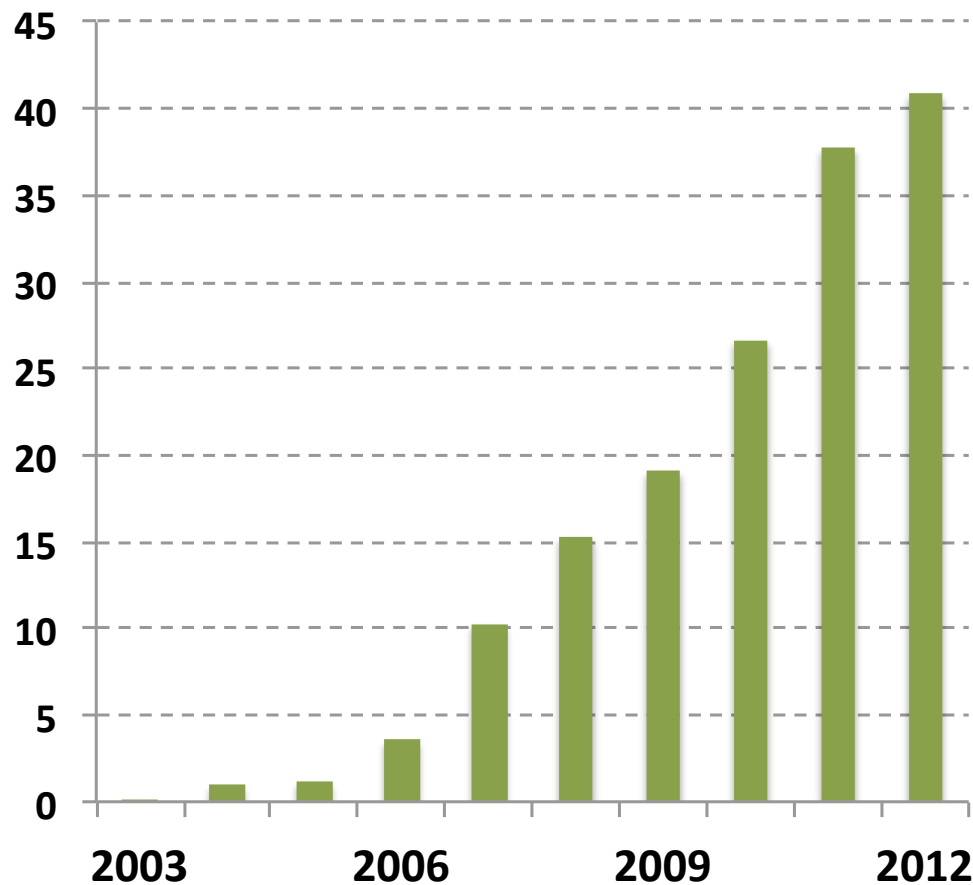
- \$23B: climate change mitigation activities
- \$11B: financing
- \$7B: social-screened investments that include but are not limited to environmental criteria

Source: Green Insurance Data Service (E. Mills)

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## Green Investments by Insurers



Source: Green Insurance Data Service (E. Mills)

Engagement by 25 insurers (46 specific activities), e.g.:

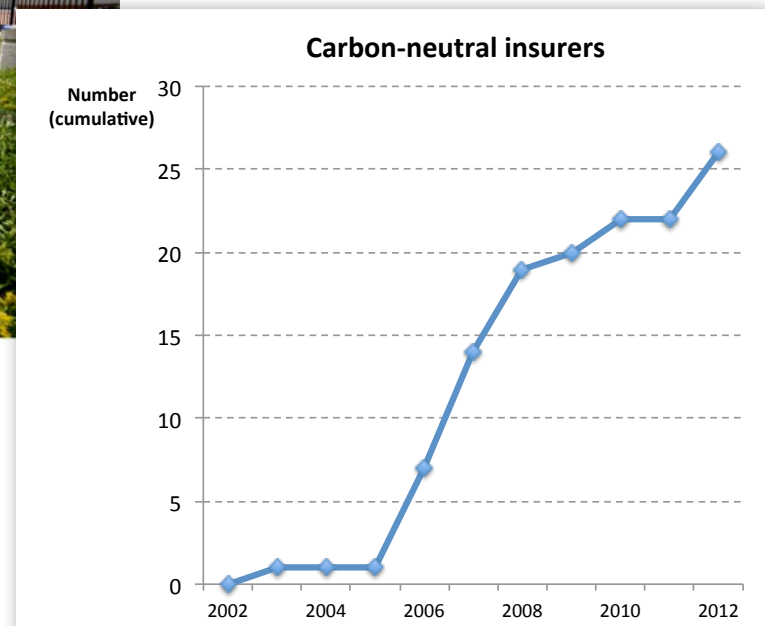
- Allianz
  - owns 34 wind farms, 658 MW
  - owns 7 solar-PV projects, 74MW
  - investment in 8.5-million-CFL CDM project
  - equity investment in REDD project
- Manulife, MetLife, AXA, Munich Re - \$1B investments in renewable project finance
- Tryg - equity positions in clean energy startups
- Prudential - purchaser of corporate bonds for clean-energy

# Insurers practicing what they preach

- At least 155 insurers have made concerted efforts at 'greening' their own infrastructure and business processes



**Allstate HQ:  
13,500 square feet of  
vegetated, green roof (2008)**



Source: Green Insurance Data Service (E. Mills)

# AIG's carbon-offset projects: 630,000 MT CO<sub>2</sub> @ \$6.50/tonne



Photography provided by AIG

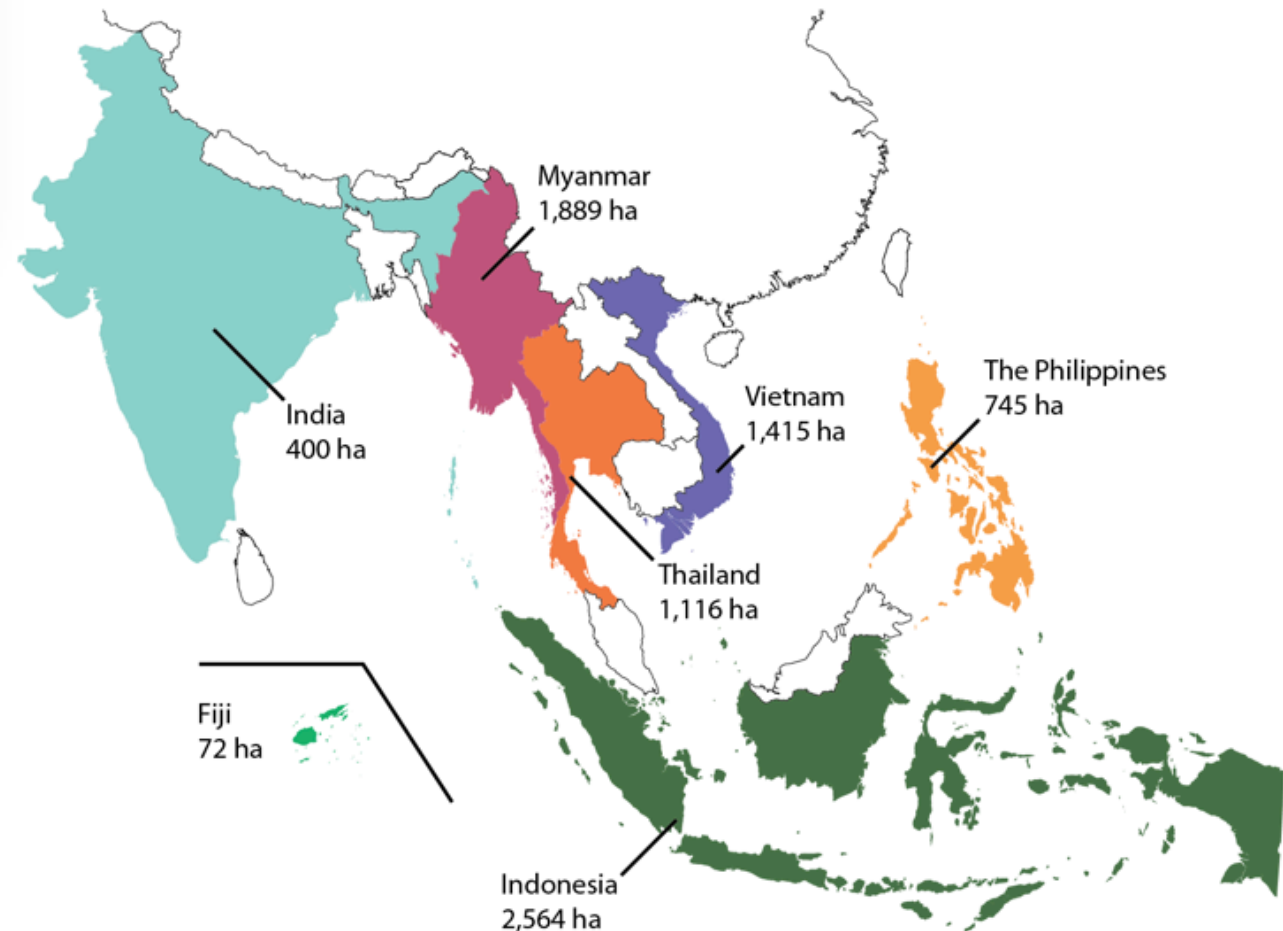
## China

- Water- and energy-efficient agriculture via drip irrigation [a]
- “Precision Nitrogen fertilizer” production
- Biogas used for cooking and lighting [b, c]
- Improve water management in rice farming and production
- Reforestation to help retain water, control dust, and soil

## US

- Grassland preservation in US northern tier states [d]
- Reforest marginal cropland in the Mississippi River delta
- Improve management of California harvested timberlands to produce increased standing-volume biomass [e]

# Tokio Marine Nichido's Mangrove Restoration Project (1999>)



# Resilience: Insurers' potential role

- Controlling losses helps maintain insurability and affordability for consumers; also reduces public burden of loss costs
- Insurers fund *and direct* 100's of \$billions each year in capital replacement and reconstruction (“paid claims”)
  - ➡ Preferential premiums for betterment of replaced or rebuilt property and infrastructure
- Lobbying for improved codes & land-use planning
- Improved vulnerability modeling based on individual building forensics; enabling targeted interventions



Resilient is not necessarily green ...  
... and green is not necessarily resilient





# Roles for IFC?

- Facilitate transfer and scale-up of (green, and inclusive) insurance offerings into emerging markets
- Facilitate and leverage increased insurer investment in green and resilient infrastructure
- Support transfer of models, techniques, regulation, other best practices from advanced markets to emerging markets (including peer-to-peer interaction among insurers: private *and* public)
- Foster private-public partnerships, with particular focus on maintaining *and* increasing insurability & removing barriers out of the control of insurers
- Lead by example in own insurance choices and practices, and proactively de-risking investments